TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION	See Form PCT/IPEA/416
BN 55 PCT		
International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/EP2005/000582	21.01.2005	23.01.2004
International Patent Classification (IPC) or national classification and IPC		
A61K39/275		
Applicant		
BAVARIAN NORDIC A/S		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

   a. ☒ *(sent to the applicant and to the International Bureau)* a total of 6 sheets, as follows:

      ☒ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s))

      _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

☒	Box No. I	Basis of the report
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/EP2005/000582

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

☐ international search (Rule 12.3 and 23.1(b))

☐ publication of the international application (Rule 12.4)

☐ international preliminary examination (Rule 55.2 and/or 55.3)

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☐ the international application as originally filed/furnished

☒ the description:

pages 1-24 as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☒ the claims:

nos. _____ as originally filed/furnished

nos.* _____ as amended (together with any statement) under Article 19

nos.* 1-45 received by this Authority on 20.10.2005 with letter of 14.10.2005

nos.* _____ received by this Authority on _____

☐ the drawings:

sheets _____ as originally filed/furnished

sheets* _____ received by this Authority on _____

sheets* _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing *(specify)*: _____

☐ any table(s) related to sequence listing *(specify)*: _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages _____

☐ the claims, nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing *(specify)*: _____

☐ any table(s) related to sequence listing *(specify)*: _____

* *If item 4 applies, some or all of those sheets may be marked "superseded."*

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/EP2005/000582

Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	7, 9-13, 15-17, 20-38, 40, 45	YES
	Claims	1-6, 8, 14, 18, 19, 39, 41-44	NO
Inventive step (IS)	Claims	7, 15-17, 40, 45	YES
	Claims	1-6, 8-14, 18-39, 41-44	NO
Industrial applicability (IA)	Claims	1-45	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

The present application relates to a method of producing an attenuated rabbit myxoma virus strain, and its use in a pharmaceutical composition for the non-specific influence of immunoparameters. The pharmaceutical composition has been tested in human patients.

1) This report makes reference to the following documents:

D1: MOSSMAN KAREN ET AL: "Myxoma virus M-T7, a secreted homolog of the interferon-gamma receptor, is a critical virulence factor for the development of myxomatosis in European rabbits" VIROLOGY, vol. 215, no. 1, 1996, pages 17-30

D2: UPTON C ET AL: "Myxoma virus expresses a secreted protein with homology to the tumor necrosis factor receptor gene family that contributes to viral virulence" VIROLOGY, vol. 184, no. 1, 1991, pages 370-382

D3: SAITO J K ET AL: "Attenuation of the Myxoma virus and use of the living attenuated virus as an immunizing agent for myxomatosis." THE

JOURNAL OF INFECTIOUS DISEASES. DEC 1964, vol. 114, December 1964 (1964-12), pages 417-428

D4: MCCABE V J ET AL: "Vaccination of cats with an attenuated recombinant myxoma virus expressing feline calicivirus capsid protein" VACCINE, BUTTERWORTH SCIENTIFIC. GUILDFORD, GB, vol. 20, no. 19-20, 7 June 2002 (2002-06-07), pages 2454-2462

D5: EP-A-0 669 133 (MAYR, ANTON, PROF. DR. MED. VET. DR. H. C. MULT) 30 August 1995 (1995-08-30)

NOVELTY (PCT Article 33(2))

2.1) Attenuated rabbit myxoma virus strains are already known from the prior art:

(i) modified myxoma virus strains Lausanne, which have a deletion in a gene segment coding for the formation of an interferon-gamma receptor (D1, figure 1) or a tumor necrosis factor receptor (D2, figures 1 and 2);

(ii) rabbit myxoma virus strains isolated from a rabbit with myxomatosis, adapted to a permissive cell system and passaged in a permissive cell culture (D3, pages 417-420; D4, page 2455, left-hand column, paragraph 2.1). These attenuated myxoma virus strains are used as pharmaceutical compositions (D1, tables 1, 2; D2, table 1; D3, tables 1, 3-5, figure 3; D4, tables 1, 2).

The attenuated myxoma virus strains known from D1 to D4 all have the features described in the present claims, and appear to be **suitable** for the specified use (PCT Guidelines, 5.23). Use claim 1 is therefore not novel.

Furthermore, a product is not automatically novel just because it has been produced by means of a novel method (PCT Guidelines, 5.26), and claims 1 to 6, 8, 14, 15, 18, 19, 39 and 41 to 44 are therefore not novel.

2.2) The subject matter of claims 7, 9 to 13, 15 to 17, 20 to 38, 40 and 45 appears to be novel (PCT Article 33(2)).

INVENTIVE STEP (PCT Article 33(2))

3.1) Dependent claims 9 to 13 and 20 to 38 do not contain any features which, in combination with the features of any claim to which they refer, meet the PCT requirements for inventive step. The reasons for this are as follows:

The continuous passaging of comparable poxviruses, in particular, chickenpox virus, parapoxvirus, vaccinia virus and canarypox virus, and the inactivation thereof by means of beta-propiolacton for producing a pharmaceutical composition that activates the paraspecific immune system is known to a person skilled in the art (D5, page 3, lines 29-40; page 5, lines 29-40; table 4).
No technical effect has been observed for the number of the passages or the use of known cell lineages during continuous passaging.

3.2) Attenuated poxvirus strains having paraimmunizing properties are known from D5 (D5, page 5, lines 35-37), but the use of an attenuated myxoma virus strain and a monoparaimmunity inducer has not been suggested.
Myxoma virus strain M-2 with deposit number ECACC

Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

03121801 is not known from the prior art.

The subject matter of claims 7, 15 to 17, 40 and 45 appears to involve an inventive step (PCT Article 33(3)).

***

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of:

Box I

Basis of the report

The amendments submitted with the letter of 14 October 2005 do not introduce any substantive matter which goes beyond the disclosure in the international application as filed (PCT Article 34(2)(b)).